

B. TECH. (F.T.B.E.) PART-I EXAMINATION, 2008
(1st Semester)

PRINCIPLE OF FOOD PRESERVATION

Time : Three hours

Full Marks : 100
(50 marks for each part)

Use a separate Answer-Script for each part.

PART-I

*Answer Question No. 1 and any **two** of the following:*

1. (i) Discuss the following : 12
- a) Heat transfer and mass transfer in drying system.
 - b) Advantages of Irradiation process over other traditional processes in preservation of foods.
 - c) Reasons of variation of drying rate among the food materials.
 - d) Solar Energy could be effectively utilized in Food Processing.
- (ii) Distinguish between : 8
- a) Critical moisture and equilibrium moisture in dehydration of foods.
 - b) K rad and K Gy in food irradiation.

[TURN OVER]

(2)

- c) Freeze drying and spray drying.
 - d) Nutritional changes using different food processing techniques.
2. Compare energy efficiencies involved in the Radiation Processing by gamma ray with other traditional food processing techniques. Discuss other radiation sources could be utilized in food processing. 15
3. Discuss with line diagram the principal and Process involved of dehydration of food using. 15
- (i) Spray Drier
 - (ii) Drum Drier
 - (iii) Fluidized bed Drier
4. Explain the following : 15
- (i) Principal of freeze drying techniques.
 - (ii) High pressure processing of foods have several advantages.

PART-II

Answer Question No. 5 and any **two** of the following.

5. Why process time in canning is based on destruction of reference microorganism and on what basis you select that microorganism ? What is 12D concept in canning ? How do you determine F value in canning ? Why is this more important than process time for buyer ? Discuss the importance of exhausting and cooling in canning. Explain reason for corrosion in tin can. 2+2+2+4+2+3+2+3

(3)

6. How do you prepare canned pineapple ? What type of can would you use and why ? How do you keep concentration of sugar in filling liquor ? What is the processing temperature ? Discuss various types of possible chemical spoilage in canned sample. 8+1+2+1+3
7. Mention relative advantages and disadvantages of chill storage and freezing. Explain ideal temperature for freezing of food. How freezing may deteriorate quality of food ? How do you calculate heat load during freezing of food ? How shelf life of agrocommodities increase under control atmosphere ? What is climacteric fruit ? 2+2+4+3+3+1
8. Define fermented food. How do shelf life of food increase by fermentation ? Explain possible advantages of fermented food. How can vegetables be preserved by fermentation ? State predominant lactic acid microorganisms grow during fermentation of cabbage. Explain ideal wateractivity for preservation of food against microbial spoilage. What is IM fruit ? 1+2+2+4+2+2+2
9. Write short notes on : (any three) 3x5
- (i) Sausage.
 - (ii) Class II preservatives.
 - (iii) Hypobaric storage.
 - (iv) I. Q. F.
 - (v) Osmodried food.